CALIFORNIA BAY-DELTA AUTHORITY

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Agenda Item: 6A
Meeting Date: June 15, 2006

CALIFORNIA BAY-DELTA AUTHORITY

CONSIDERATION OF A RESOLUTION ESTABLISHING A RECONSITITUTED INDEPENDENT SCIENCE BOARD

Summary: The previous Independent Science Board (ISB) last met in May 2005 and is no longer under contract. The Lead Scientist is nominating a new Independent Science Board for approval.

Recommended Action: The Authority adopt Resolution 06-06-03, dissolving the previous ISB approved August 14, 2003, and establishing a reconstituted ISB as nominated by the Lead Scientist.

Background

As reported in the Lead Scientist Report at the September 2005 Authority meeting, the current CALFED Science Boards [CALFED-wide Independent Science Board (ISB), the Ecosystem Restoration Program Science Board (ERPSB); Water Management Science Board (WMSB)] and their activities have been on hiatus since the contract supporting their efforts expired in May 2005. This hiatus has provided an opportunity to examine the organization and structure of the CALFED science boards and determine whether they might be improved to better meet the current needs of the CALFED Program and implementing agencies.

Working with Science Program staff, CALFED Program managers and lead agency staffs, the Lead Scientist developed an approach that would streamline the current board structure, while maintaining the technical oversight and scientific integrity required to support CALFED management needs. The recommended approach, reported at the Authority's October 2005 meeting, envisioned a smaller, more targeted ISB, made up of only 10 to 12 members, along with advisors, technical review panels and workshops to address specific technical and scientific review needs for the Program.

As reported at the November 2005 Authority meeting, the Lead Scientist proposed to defer implementation of this new approach until a new Lead Scientist was in place, which was expected to occur by summer 2006. Since it is now uncertain when a new Lead Scientist will be in position, and because the term of the current Lead Scientist will expire June 30, 2006, he now recommends moving forward with reconstituting a smaller, more targeted ISB.

The California Bay-Delta Authority Act states: "The Lead Scientist shall nominate, and the Authority shall establish, a board of independent scientists, to be known as the Independent Science Board, that shall advise and make recommendations to the Authority and the Bay-Delta Public Advisory Committee, as appropriate, on the science relative to the implementation of all program elements (Water Code sec. 79470(a))."

The ISB is designed to be a standing board of distinguished experts (scientists and engineers) made up of individuals with a range of multi-disciplinary expertise balanced among those with local experience and those with external relevant expertise. These experts will help the Authority establish a balanced view of the science issues that underlie important policy decisions. The ISB will not pass direct judgment on the success or failure of the Authority's programs, but provide insights that can make the science underlying those programs, the application of that science, and the technical aspects of those programs, the best they can be. This includes overseeing the goal of explicitly characterizing the status of knowledge and identifying assumptions and uncertainties. The ISB, as a whole, will include the necessary expertise to cover the breadth of CALFED Program issues.

The new ISB will follow the charge as attached (Attachment 2 of Resolution 06-06-03). Primary near-term ISB activities will include evaluating the science agenda for the CALFED Program as a whole, assuring science is used in all programs, helping to select the Lead Scientist, and beginning work on proposed National Research Council (NRC) reviews.

The Authority is asked to approve a resolution that will do the following: (1) dissolve the previous ISB, and (2) establish a new, reconstituted ISB as nominated by the Lead Scientist. The Lead Scientist's recommended list of new ISB members is attached with a brief biography for each proposed member (Attachment 1 of Resolution 06-06-03). It is expected that the new ISB will hold its first meeting in August 2006. Meetings of the ISB will be open to the public.

Fiscal Information

ISB members will be compensated for their time as is standard when participating on a standing board or technical panel. Funding for the ISB is part of the Authority's Science Program Budget.

List of Attachments

Resolution 06-06-03

Contacts

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RESOLUTION 06-06-03

CONSIDERATION OF A RESOLUTION ESTABLISHING A RECONSTITUTED INDEPENDENT SCIENCE BOARD

WHEREAS, the California Bay-Delta Authority Act requires the Lead Scientist to nominate, and the Authority to establish, a board of independent scientists, to be known as the Independent Science Board, to provide advice and recommendations to the Authority and the Bay-Delta Public Advisory Committee on science issues related to all CALFED Program elements; and

WHEREAS, the Independent Science Board previously established by the Authority at its August 2003 meeting had 18 members who are no longer under contract, and consequently, the activities of that board have been on hiatus since that contracting mechanism expired in May 2005;

WHEREAS, the Lead Scientist has during that period of hiatus, reviewed the existing board structure, and has now nominated a smaller, more targeted panel of 12 individual experts (Attachment 1) to serve on a newly reconstituted Independent Science Board, as defined in the approved charge (Attachment 2);

NOW, THEREFORE, BE IT RESOLVED that the California Bay-Delta Authority dissolves the previous Independent Science Board and establishes, upon the nomination of the Lead Scientist, a reconstituted Independent Science Board comprised of the individual experts listed in Attachment 1, and operated in accordance with the charge described in Attachment 2.

CERTIFICATION

The undersigned Assistant to the California Bay-Delta Authority does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the Authority held on June 15, 2006.

Dated: _____

_____

Julia E. Alvis
Assistant to the California Bay-Delta Authority

Individuals Nominated to the Independent Science Board

Brief Biographies

Jeff Mount, Ph.D., (Proposed Chair)

Professor, Department of Geology, University of California, Davis

Dr. Mount's research program focuses on the geology, geomorphology and restoration of lowland river systems. He is also involved in the integration of science and policy in the management of California's rivers. Author of the acclaimed book, California Rivers and Streams, Dr. Mount currently holds the Roy. J. Shlemon Endowed Chair in Applied Geosciences at UC Davis and is the Director of the UC Davis Watershed Center. He is a member of the National Academy of Sciences Committee on the Klamath River and served on the CALFED Independent Science Board. He received his doctorate in Earth Sciences from the University of California, Santa Cruz.

Antonio Baptista, Ph.D.

Head of the Department of Environmental and Biomolecular Systems, OGI School of Science and Engineering, Oregon Health and Science University

With extensive experience in modeling estuarine systems, Dr. Baptista is the scientific director of CORIE, a pioneering multi-purpose coastal-margin observation and prediction system for the Columbia River estuary and adjacent coast that is integral for scientific research and sustainable development issues in the region. Dr. Baptista is also on the Steering Committee for the Northwest Association of Networked Ocean Observing Systems. He received his doctorate in civil engineering from the Massachusetts Institute of Technology.

William Glaze, Ph.D.

Professor Emeritus, University of North Carolina at Chapel Hill

Former chair of the U.S. Environmental Protection Agency's Science Advisory Board and the first chair of its Drinking Water Committee, Dr. Glaze is an expert in water quality and drinking water treatment. He was editor of the prestigious journal Environmental Science & Engineering for 15 years and served on the National Academy of Sciences Board of Environmental Studies and Toxicology. He was a member of the CALFED Independent Science Board and CALFED Water Management Science Board. Most recently, he served as the Associate Dean for Research at Oregon Health and Sciences University, OGI School of Science and Engineering. He received his doctorate in physical chemistry from the University of Wisconsin.

Peter Goodwin, Ph.D., P.E.

DeVlieg Presidential Professor, Department of Civil Engineering, University of Idaho

As the Director of the Center for Ecohydraulics Research, Dr. Goodwin heads an interdisciplinary program researching the linkages between ecological response to management actions or changes in physical processes of rivers, lakes, estuaries and wetlands. Current research activities in watershed management include the Coeur d'Alene River basin, the Upper Salmon River basin and the Lake Amatitlan watershed in Guatemala. He was elected to the Council of the International Association for Hydraulic Research in 2003 and was the most recent member of the CALFED Independent Science Board. Dr. Goodwin earned his Ph.D. in civil engineering from the University of California, Berkeley.

Michael Healy, Ph.D.

Professor, Institute for Resources, Environment and Sustainability, University of British Columbia

An internationally recognized expert in the ecology and behavior of Pacific salmon, Dr. Healy's current studies include bioenergetic and behavioral research on upstream migration and spawning in salmon, competition and predation between cultured and hatchery fish and habitat requirements for endangered fish in Fraser Valley of Greater Vancouver. He is also known for his work on adaptive management with the CALFED Ecosystem Restoration Program Science Board. Dr. Healey received his doctorate in natural history from the University of Aberdeen.

Jack Keller, Ph.D., P.E.

Principal, Keller-Bliesner Engineering and Professor Emeritus, Utah State University

A member of the National Academy of Engineering, Dr. Keller is an international advisor on water resources and development focused on agricultural water use. He is considered an expert in irrigation, water conservation, and water resources planning in irrigated regions. He serves as an advisor to the CALFED Water Use Efficiency Program and was on the CALFED Independent Science Board. Dr. Keller has a degree in civil engineering and earned his doctorate in irrigation engineering at Utah State University.

Daene McKinney, Ph.D.

Professor, Environmental and Water Resources Engineering Program, University of Texas at Austin

With expertise in water resources and river basin modeling, Dr. McKinney is currently working as a Water Management Specialist to the US Agency for International Development and is editor of Water Resource Planning and Management. His research focuses on transboundary water and environmental issues. He was one of the senior modelers brought in to assist CALFED in reviewing the CALSIM II Model and he co-authored the resulting report. Dr. McKinney previously served on the CALFED Independent Science Board and CALFED Water Management Science Board. Dr. McKinney earned his doctorate in Civil and Environmental Engineering from Cornell University.

Judith Meyer, Ph.D.

Director, River Basin Science and Policy Center, and Research Professor of Ecology, University of Georgia

A nationally recognized expert on aquatic ecology and rivers, Dr. Meyer is past president of the Ecological Society of America. Her research interests include organic carbon, ecosystem processes in streams and food webs. She is the 2003 recipient of the Award of Excellence in Benthic Science and chaired the Technical Selection Committee for the CALFED Bay-Delta Program's 2002 Ecosystem Restoration Program grant selection process. Dr. Meyer also served on the CALFED Independent Science Board. She earned her doctorate at Cornell University.

Richard Norgaard, Ph.D.

Professor, Energy and Resources Group of Agricultural and Resource Economics, University of CA, Berkeley

A pioneer in the field of ecological economics, Dr. Norgaard's recent research addresses how environmental problems challenge scientific understanding and the policy process. He is a member of the Environmental Economics Advisory Committee of the Science Advisory Board of the U.S. Environmental Protection Agency, serves on the Board of the American Institute of Biological Sciences and has served as President of the International Society for Ecological Economics. He was a member of the CALFED Water Management Science Board. Dr. Norgaard earned his doctorate in economics from University of Chicago.

Duncan Patten, Ph.D.

Research Professor, Montana State University

With expertise in plant biology and riparian ecology, Dr. Patten has conducted extensive research into ecological processes and restoration of western riparian and wetland ecosystems. He was a senior scientist with the Bureau of Reclamation's Glen Canyon Environmental Studies, overseeing research on the effects of operations of Glen Canyon Dam on the Colorado River riverine ecosystem. He has served on National Science Foundation panels, has been a member of various committees, boards, and commissions of the National Research Council and has been an officer in the Ecological Society of America. Dr. Patten was on the CALFED Independent Science Board and Ecosystem Restoration Program Science Board. He received his doctorate in botany-ecology from Duke University.

Paul Smith, Ph.D.

Adjunct Professor, Scripps Institution of Oceanography, University of California, San Diego

With expertise in pelagic ecology, Dr. Smith is currently a research associate of the Integrated Oceanography Division of Scripps Institution of Oceanography. He previously worked as a fisheries biologist with the Southwest Fisheries Science Center of the National Oceanic and Atmospheric Administration. Dr. Smith was awarded the Commerce Gold Medal for his work in interpreting adult fish population size time series and larval fish mortality rates from Cal COFI surveys. He also was a member of the Interagency Ecological Program Pelagic Organism Decline technical review panel in 2005. Dr. Smith earned his doctorate in zoology from University of Iowa.

Robert Twiss, Ph.D.

Professor, Graduate Center for Environmental Design Research, University of California, Berkeley

As an expert in environmental and regional planning, Dr. Twiss has been involved in all levels of planning and research for local, regional state and federal agencies as well as the United Nations. He is a member of the US EPA Science Advisory Board. Dr. Twiss was on the CALFED Independent Science Board, served as co-chair of the CALFED Ecosystem Restoration Program Science Board and was on the CALFED Water Management Science Board. He also served as Chair of the California State Mining and Geology Board, and Chair of the California/Tahoe Regional Planning Agency. Dr. Twiss received his doctorate in conservation from the School of Natural Resources, University of Michigan.

CHARGE TO THE RECONSTITUTED INDEPENDENT SCIENCE BOARD OF THE CALIFORNIA BAY-DELTA AUTHORITY

An Independent Science Board is called for in the CALFED ROD (August 2000) to ensure the application of world-class science to the California Bay-Delta system. Similarly, the Act requires an Independent Science Board to provide this function.

The Independent Science Board would be a standing board of distinguished experts (scientists and engineers) who would directly advise the Authority and BDPAC, as appropriate, on the application of science and the effectiveness of science practices across the Bay-Delta Program. The Independent Science Board would not be asked to pass direct judgment on the success or failure of Bay-Delta programs, but to provide insights that can make the science underlying those programs, the application of that science, and the technical aspects of those programs the best they can be. This includes overseeing the goal of explicitly characterizing the status of knowledge and identifying assumptions and uncertainties. Independent Science Board members would be paid. Many of the members of the Independent Science Board will also be members of existing standing boards and technical panels. The Board as a whole should thus include the necessary expertise to cover the breadth of California Bay-Delta issues. It is expected that the Independent Science Board will grow beyond the initial appointees to address the necessary expertise, but will be no larger than 12 members total.

The specific charge of the Independent Science Board is outlined as follows:

1. Understand the technical underpinnings of the Bay-Delta Program. Work with the Lead Scientist and the Science Program to effectively incorporate science into large scale water management and restoration programs. As a group, the Independent Board should have and sustain an up-to-date understanding of the Authority's proposed actions and the state of the science applicable to those actions.

2. Evaluate and provide insights on progress toward addressing underlying premises of the Bay-Delta Program. Implicit in the CALFED ROD are basic premises about balanced progress toward achieving the four goals of the program. Can outcomes of ecosystem restoration balance outcomes of modifications of water diversion? Should ecosystem restoration proceed across the Delta or avoid areas influenced by stressors such as the diversion pumps? How does the program balance the benefits of bioavailable carbon genesis in restoration projects with the adverse consequences of DOC for drinking water? An important mission of the Board is to explicitly identify the fundamental premises and help the program track progress toward addressing the technical aspects of these.

3. Annually evaluate the science agenda. Annually provide insights and evaluation on the implementation of a strategic, balanced, and proactive science agenda across the entire program. Evaluate technical priorities, adequacy of funding, peer review, use of outside experts, and the successes and weaknesses of the investments in gaps in

scientific knowledge. Evaluate progress on the development of an authoritative body of knowledge relevant to each goal and program of the Authority. Help identify where important gaps in knowledge or the science effort might exist, with an emphasis on considering interconnections among different elements of the Program.

4. Assure balance and credibility of analyses. Provide insights in an annual report as to whether the analyses of the state of the science being applied to specific issues under the purview of the Authority are balanced and credible, including insights on how to improve such analyses in general or in the case of specific issues.

5. Approve performance measures. Evaluate and provide final approval of performance measures for the Bay-Delta Program, assuring scientific rigor and balanced interpretation of each measure and its updates.

6. Assure science is used in all programs. Compare development of science in different standing programs of the Authority and give advice on how to move science forward in all programs (including advice on selection of experts of advisory functions or standing boards; evaluation of science priorities).

7. Identify impending issues and significant interconnections. Help the Authority anticipate issues and identify areas of interconnection among programs that might otherwise be missed by more specialized boards and panels; and suggest solutions, where needed, to interconnecting issues (e.g., technically-based actions, workshops, reviews, RFPs, program collaborations, or new research).

8. Work with the National Research Council. Work with National Academy of Sciences and National Research Council board representatives to develop broad questions suitable for outside review by the National Research Council.

9. Help select the Lead Scientist. Working closely with the Director, the Independent Science Board will lead and oversee the selection process when the Lead Scientist position is vacant. This will include making a recommendation to the Authority on the nomination of potential candidate(s).

The Independent Science Board's proposed role is one of overview rather than initiating reviews. The Independent Board cannot rescind the technical results of standing boards or technical panels or any other working group. But the Independent Science Board will review the activities of those groups for balance, rigor, and use of authoritative science. It is expected that individual standing boards will continue to act with independence with regard to their areas of assignment; although they might consult with the Independent Science Board for insights and suggestions to aid these activities. Like all technical expert bodies, the Independent Science Board will not be asked to make policy decisions, but it will provide insights on how to improve credibility, improve clarity, and advance the debate about Bay-Delta issues, as well as how to better connect science and management.

Board members may be asked to testify on their evaluations before the Legislature or Congress. The Board will meet approximately four times per year unless experience dictates a greater or lesser meeting frequency. Board membership for an individual may be renewed up to two times at the request of the Lead Scientist, with concurrence from the Director and the Authority.

Definition of Independent Expert

Independent experts are defined by their academic credentials in specific areas of needed expertise. Except in specifically defined circumstances, they have little or no direct stake in the issue for which they are advisors. The experts are typically paid for their work by the Authority, unless they are Federal or State employees (whose hours may be reimbursed to their employer).

Typical activities of independent experts include the following:

1. Bringing detailed expertise to bear on scientific issues of concern. This may include characterizing the status of knowledge about critical issues; identifying key scientific issues, or helping staff prioritize issues. Other duties include organizing or participating in workshops on critical subjects, and/or identifying, proposing, prioritizing, or writing white papers or reviews. Some expert advisors have identified pending issues before they become critical or worked directly with managers, staff biologists, or operating engineers to help them take into account broader scientific practices, principles and implications.

2. Reviewing, advising, or providing technical insights for documents, proposals, or programs. Programs can include either issues that require multiple studies or proposals for an action by implementing agencies, such as changes in conveyance, threats to levees, and restoration strategies.

3. Analyzing existing data related to specific actions or programs as relevant to reviews or advising as described above.

4. Designing, conducting, or leading studies relevant to accomplishing Program goals that are not in conflict with review roles.

Qualifications of Independent Experts

Independent experts are agents for facilitating communication between the Authority and the scientific and management community. Therefore, they must have the highest level of expertise and stature so that their advice is respected by the public, scientists, agency technicians, agency staff, BDPAC, and management. The ability to sustain a balanced view of issues is just as important as stature in an independent expert. It is critical that the expert (or advisor) have a reputation for willingness to listen to opposing

views, willingness to change one's mind in the face of evidence contrary to an original view, and willingness to separate one from biases associated with employment or professional associations. Thus, invitation to be an independent expert requires all or most of the following:

• Scientific stature. Evidence of stature in the broad scientific community (invited contributions to workshops, conferences or panels; evidence of scientific leadership; awards, membership, or important committee assignments in prestigious organizations).

• Advisory experience. Experience advising top managers and promoting constructive uses of environmental science, especially in arenas relevant to water management and/or ecosystem restoration.

• Technical publications. A strong record of publication in peer-reviewed scientific literature in an area of expertise relevant to the issues at hand.

• Relevant knowledge. Evidence of extensive and/or intensive working knowledge of a scientific field related to the specific issues of concern.

• People skills. Evidence of abilities to work and communicate well with people.

• Reputation for achieving balance. Evidence of ability to weigh issues in a balanced manner when in an advisory capacity.

• Interdisciplinary skills. Evidence of ability to work and think across disciplines, and/or experience in working with and advising on complex issues that integrate multiple disciplines.